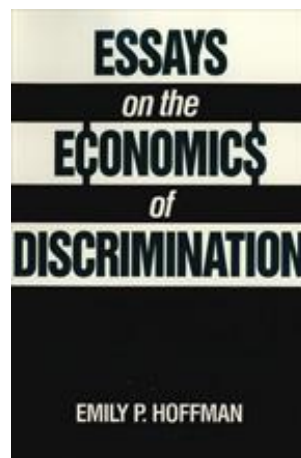




Upjohn Institute Press

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Paul Taubman
University of Pennsylvania



Chapter 3 (pp. 25-42) in:

Essays on the Economics of Discrimination

Emily P. Hoffman, ed.

Kalamazoo, MI: W.E. Upjohn Institute for Employment Research, 1991

DOI: 10.17848/9780585255859.ch3

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Discrimination Within the Family

The Treatment of Daughters and Sons

Paul J. Taubman
University of Pennsylvania

My topic is the comparative parental treatment of daughters and sons and whether any unequal treatment should be labeled “discrimination.” I have chosen such a strange topic because economists find it difficult to explain why a freely functioning, competitive market would allow equally skilled employees to receive unequal pay for equal work. Yet, as summarized below, such a situation seems to exist between men and women. Economists like to argue, therefore, that nonmarket institutions such as the school system or the family have produced daughters and sons who are not equally skilled in some dimension not yet measured by researchers. This paper will cast some doubt on this conclusion.

I first sketch out the historical path of the ratio of female to male wages under the assumption that discrimination in the labor market is defined as equally qualified men and women not receiving equal pay. Determining that men and women are equally skilled, however, is a hard task empirically.

I then explore the reasons why economists find it difficult to explain how discrimination can persist in the long run in markets that are competitive. Hence, I next examine families to see if we can observe parents treating daughters and sons differently and thereby creating unequally skilled children. In doing this, I examine studies that quantify some aspects of family environment that may affect subsequent performance in the labor market. I do not, however, cover many psychological aspects such as aggressiveness or submissiveness, since they are not characteristics studied by economists. Finally, I provide a definition of discrimination within the family and discuss what is known on the topic.

Labor Market Treatment

In a labor market without discrimination, equally qualified men and women would receive the same compensation for the *same work*. Many people, therefore, treat as evidence of labor market discrimination unequal pay for workers with the same *measured qualifications*. Sometimes these studies compare wages for the same occupation, though this ignores the question of whether discrimination operates by reducing access to some occupations for women. In any event, qualifications are an imperfect measure of either work or effort.

Even insuring that people have the same qualifications is a tricky business. Sometimes "equally qualified" is defined by looking at specific age and education groups. Sometimes not even such crude adjustments are made. There are other variables that have not been used at all by economists in defining equally qualified groups. Loehlin and Nichols (1976, p. 11), for example, present average scores for female and male high school students for various components of the California Personality Inventory. There are noticeable gender differences on items such as "social presence" or "communicability."

Labor market differentials between women and men have a long history. For example, *Leviticus* 27: 1-4 indicates that female slaves sold for about 60 percent of the price of male slaves.¹ It is also possible to reach further back in time. The Museum of the University of Pennsylvania has a large collection of Sumerian commercial records baked in clay. Some economic historian might find it interesting to calculate a "weighty" average of male and female slave prices for this civilization.

For the U.S., most attention has focused on the post-World War II period. However, Goldin (1990) has examined developments in the labor market for women back to the beginning of the nineteenth century. She finds that the ratio of female to male wages was a bit less than .5 around 1900. In the 1950s and 1960s, this ratio was about .6. More recently, Smith and Ward (1989) show it has risen to about .65.

In judging the level and the time pattern in this ratio, several issues must be kept in mind. First, since 1950, the percentage of nonelderly

married women participating in the labor force has more than doubled, reaching 60 percent in recent years. It is quite possible that women workers today have different innate and acquired skills from the women workers of the 1950s.

Smith and Ward (1989) have calculated the differences in education and experience for all and for working men and women.² The working women are not a random draw from the female population. Smith and Ward (p. 12) indicate that among workers over the period 1940 to 1970, "women on average, lost almost a year of education and gained only half a year of market experience" compared to male workers. However, for the *population* at large, the present female and male labor force is generally more knowledgeable than the population in 1950, though there have been intermediate periods where the population has had greater knowledge than today's workers.³ Comparable numbers on knowledge levels for the people who work are not available.

The life cycle pattern of labor force participation of women complicates the analysis and the interpretation of the female/male wage ratio. To understand this, I must digress to explain the concept of general on-the-job training. Such training, which can be provided by parents, schools, and firms, increases an individual's (marginal) productivity and wages at many jobs. In a competitive world, all these jobs should pay the same wage; hence, any firm that provides training cannot recapture expenditures on training through reduction in future wages. Therefore, the person being trained must pay for these expenditures now via tuition or reduced current wages.

It is possible that the influx of women into the labor force in the 1950s, 60s, and 70s lowered the *average* amount (stock) of training of women in the labor force in some years, since there were so many new workers at many ages.⁴

Two other life cycle-related events are important. Often when a child is born, the mother takes formal, temporary maternity leave or drops out of the labor force for a more extended time.⁵ Since any worker's return to general training occurs in the form of higher wages when working, younger women contemplating having children may be reluctant to choose positions with higher training components and with lower current

and higher future earnings. (Of course, this also implies that, when beginning a labor market career, women should receive greater wages than men, which we don't observe.) Moreover, Mincer and Ofek (1982) indicate that women who return to the labor force after being out more than one year receive lower wages than when they left work, with this differential increasing with the amount of time spent out of the labor market. However, they argue that this deterioration is quickly overcome. Still, a larger increase in reentrants will drag the female/male wage ratio down.

Suppose this gender wage ratio is less than 1. Is this an indication that sexual discrimination exists in the labor market? As my previous discussion indicates, the answer is "not necessarily," because men and women could have engaged in different previous on-the-job training programs. In addition, they can have different skills or may have selected jobs with different attributes that trade off for wages. Bound, Griliches, and Hall (1986), using a sample of brothers and sisters, find that there are unobserved but latent family effects on schooling, IQ, and earnings, and that these effects "are sex blind" (p. 97). Lucas (1977) finds substantial wage rate tradeoffs for nonpecuniary job characteristics with some differences by gender. These differences explain a portion of the gender wage differential.

Moreover, average differences in *observed* characteristics, such as years of work experience, account for much of the observed difference in the wage ratio (see Neumark 1988). Corcoran and Duncan (1979) find that completed years of training on current job and "other work history" explain about 40 percent of the wage gap observed in 1976. Yet the ratio adjusted for differences in the average of observed characteristics is still less than 1.

In spite of this consistent finding, many economists are reluctant to label this difference as "labor market discrimination." Let me sketch out why.⁶ We distinguish three types of discrimination: employer—in which the boss suffers pain or disutility from employing women or non-whites in a job; employee—in which one type of worker suffers pain or disutility from laboring with workers of another demographic type; and consumer—in which the buyer of a product suffers pain or disutility

from buying a product made or sold by someone from another ethnic or gender group.

For simplicity, assume that all workers have the same skill level and that there is full employment. In the employer model with fixed capital, there can initially be discrimination with the disfavored group receiving a smaller wage. The gender wage differential must be set so that both female and male labor markets clear at the going wage rates. The amount of the wage differential will depend on how much the *employer* of the last woman needs to be compensated (for the disutility he incurred) by reduced female wages to hire her. This same gender differential will be paid for all equally skilled women, since they are assumed to be interchangeable.

However, suppose some employers have less gender distaste and are more willing to hire women. The more women capitalists hire, the greater will be their profits, since women workers are hired at a lower wage than equally skilled men. In the long run, these more profitable employers can expand their firms—as long as lenders and investors only care about interests and profits. This will increase the demand for the female labor force. Bigger bigots will have lower profits and their capital will shrink over time. As long as some people aren't discriminators, the long-run equilibrium is one where all equally skilled people are paid the same wage for the same work.

Employee discrimination also can be found in the short run, but if mixed workforces cause the employer to pay higher wages, competitors can be expected to set up gender "pure" plants. Since by assumption all workers are equally skilled, equilibrium requires equal pay at *segregated* plants.

Consumer discrimination may be viable in both the short and long run, but this type of discrimination is not thought to be very important for the economy as a whole. For most products, you don't know who made a good. Of course, you may know from whom you bought it, but retail trade, which includes more than sales, accounts for less than 5 percent of our jobs and about 12 percent of civilian employees are in sales at all levels of trade.

Leaving aside consumer discrimination, economists have a difficult time explaining why discrimination should be found in labor markets in the long run. Wage differentials, however, are found between men and women with the same education and years of job experience, though these differentials have narrowed in recent years. Several possible explanations are: economists don't know how to model the labor market; the labor market isn't competitive; adjustments to eliminate discrimination take a very long time; or people with the same length of job experience and years of schooling are not equally skilled, perhaps because of treatment within the family.

As a practicing economist I am willing to reject the first reason out of hand, and I note that numerous studies have generated results consistent with economic models of the labor market. While Akerlof (1985) has shown how discrimination could persist in a noncompetitive labor market, it is difficult to believe that such noncompetitiveness is pervasive enough to have a major impact on wage ratios.

It is possible that the adjustment process is very slow. For example, Margo (1986) shows that a child's literacy depends strongly on the parents' literacy. The time since emancipation in this country—a date when less than 20 percent of blacks could read (Smith 1984, p. 691)—may not be long enough to have made blacks and whites functionally literate to the same degree, given this intergenerational link. However, if adjustment takes this long, economic theorems about the long run lose much of their interest.

The possibility that differential treatment in the family produces sons and daughters with different quantity and quality of skills and human capital remains and is the focus for the remainder of this paper.

The Role of the Family

Parents can be very important in shaping the socioeconomic outcomes of their offspring. For example, among same sex identical twins about 50 years old, the correlation in earnings is nearly .6 (even with no allowance for measurement error).⁷ On measures more closely attuned

to childhood, the identical twin correlations are even higher, ranging up to .95 for IQ.

These twin correlations occur because of both genetic and environmental linkages. I will not dwell at great length on the genetic linkage or its measurement though I will note that I have generated some (controversial) estimates that suggest that genes explain much of the individual difference (variance) in schooling and earnings.⁸ It is of more importance to consider how much parents can influence their children through the provision of their environment. Of course, if all effects are either genetic or environmental, then it must follow that environmental effects are “surprisingly small,” but they are nowhere near zero.

In some samples it is possible to divide environmental effects into those “common” to siblings and those that are specific to a child.⁹ The available literature suggests that the “common” environmental component, with which no parental discrimination can be associated, has limited impact on the across-family variance in socioeconomic and psychological outcomes—though most studies measure this common environment for brothers. See Behrman et al. (1980), Behrman, Pollak and Taubman (1989), Scarr and Weinberg (1976), and Tellegen et al. (1988), which use a variety of techniques and samples. Individual specific environment can be provided both in and outside of the family. The individual environment provided by the family could differ by gender and make daughters and sons unequally skilled.

I next examine what we know about differential provision of environment by child's gender and then refine by definition of parental discrimination.

The Treatment of Daughters and Sons

Smith (1984, p. 687), using published Census documents,¹⁰ presents estimates of average years of schooling completed for white and black males and females. His table 3 is reproduced (with permission of the *AER*) as my table 1. As shown in this table, through the 1916 to 1920 birth cohort, white women have up to .5 of a year more education than

white men. From then through the 1946-50 birth cohort, white men (many more of whom would have been eligible for education benefits from the G.I. Bill) have an advantage over white women of less than .25 of a year of schooling. My updated results from the 1980 Census suggest a slight advantage for white women in the next age cohort—1955-1959. Black women have generally had about .5 of a year more education in most birth cohorts than black men.

Table 1
Mean Schooling Levels by Birth Cohort
(Years of Schooling)

Birth cohort	White males	Black males	White females	Black females
1951-54	12.64	11.82	12.70	12.24
1946-50	12.68	11.93	12.45	11.86
1941-45	12.32	11.25	12.14	11.33
1936-40	12.00	10.46	11.81	10.89
1931-35	11.69	9.78	11.52	10.37
1926-30	11.38	9.11	11.33	9.87
1921-25	11.14	8.44	11.12	9.03
1916-20	10.74	7.65	10.79	8.36
1911-15	10.15	6.75	10.36	7.70
1906-10	9.72	6.26	10.02	7.16
1901-05	9.19	5.72	9.45	6.46
1896-1900	8.74	5.42	8.96	6.03
1891-95	8.18	4.96	8.42	5.52
1886-90	7.74	4.72	8.11	5.13
1881-85	7.56	4.38	7.95	4.67
1876-80	7.44	4.11	7.88	4.27
1871-75	7.22	3.56	7.58	3.59
1866-70	7.07	3.06	7.45	2.89
pre-1865	6.76	2.37	7.13	1.99

SOURCE Smith 1984, p 687

The differences in any birth cohort are small and in this dimension of human capital there seems to be no presumption of gender discrimination by parents. However, the use of averages does not speak fully to

the issue. Until about 1980, a larger fraction of men than women went to college. See Goldin (1990). While this may indicate a greater parental financial contribution to sons, it should be noted that after finishing school, daughters typically work before marriage. If she lives with her parents and contributes funds, the family is foregoing some of this potential income while the daughter finishes high school.

Parents may also affect children's future prospects by sending them to private and parochial precollege schools.¹¹ Table 2 presents information on the percentage of each sex who attended public school in various years. Only small differences exist with no clear gender pattern. Similar results hold when education is divided into elementary and secondary levels. Also, the number of female and male students in Catholic schools are about equal.

Table 2
Percentage of All Students of Each Gender
3 to 34 Years Old Enrolled in Public Schools

	1950	1960	1966	1974	1981	1986
	%	%	%	%	%	%
Male students	89.4	86.3	87.1	88.6	87.2	87.6
Female students	88.8	85.7	86.2	87.8	87.2	86.2

I have also estimated a logit model, in which I distinguish public, Catholic, and other private high schools, for a 1957 Wisconsin High School senior sample. While IQ, living in a rural community, and parental income have highly significant coefficients, the coefficients on gender are very small and highly insignificant.

Parents can support their children at college and influence their college choices via nonmonetary means. In the Ivy League, less than half of the undergraduate body is female, though the female percentage may be rising. At the University of Pennsylvania, which has an undergraduate nursing school, engineering school, business school, and college of arts and sciences, the percentage of female freshmen matriculants has risen

from about 40 percent in 1978 to about 45 percent in 1988. Penn's admissions are need-blind. About half of Penn's students are not eligible for financial aid because of own and parental income and wealth. Women account for 42 percent of the freshmen students receiving aid in 1988.

In interpreting these results, note that Penn admits about a fourth of its freshmen solely on the basis of academic standing. The remainder are admitted on a combination of academic and nonacademic credentials, but as far as I am aware gender is *not* a criteria of diversity. Thus, judging by Penn, there is a slight tendency for daughters to have a marginally smaller chance to attend an Ivy League school, and those daughters who attend come from slightly wealthier families. The available evidence, e.g., Taubman (1975), which is based solely on men, indicates that people who went to schools where students have higher SAT scores and better facilities have greater income, even after controlling for own intelligence, job preferences, and a huge number of family background variables.

While years of schooling is the easiest data to obtain about daughters and sons, some additional information is known. For example, Behrman and Taubman (1986) indicate that daughters who attend college receive \$315 per year more parental monetary support than sons in college.

Behrman, Pollak, and Taubman (1989) have begun to examine a new sample of 1985 Pennsylvania high school seniors, which was provided to them by Professor M. Tierney. This sample matches records from applications to the Pennsylvania Higher Education Authority (PHEA) (by Pennsylvania residents) with records from the Education Testing Service (ETS). The PHEA data include parents' (or if they are independent their own) federal income tax returns, the school they are attending, and the cost of attendance net of scholarships, and also net of loans provided by the federal and state government.¹²

Behrman, Pollak, and Taubman examine the college choices of sons and daughters. Schools in the sample can be characterized by type, such as private high-cost, out-of-state, etc., and by dollar amount of costs before and after scholarships. In logit equations for type of school, there are strong effects of parental income, SAT scores, and ethnicity. There are also significant but very small effects of gender in a sample where

women are 53 percent of the total. The largest difference is no more than 10 percent, and sons only have an advantage for Pennsylvania state-owned schools¹³ and community colleges, which are the inexpensive choices. However, the female percentage is generally smaller than the 53 percent found in the samples.

They also examine the amount spent on colleges. Tuition (gross and net of scholarships and loans) is positively related to parental income and to the child's gender. Girls expend 2 to 3 percent more, even with parental income held constant. Hence, there is little overall difference in the type of college attended by the 10,000 students except in the greater attendance of men in the low-cost groups given above. This is at variance with the Penn experience.

Parents can contribute more than money to prepare their children for adulthood. Parental time, examples, and emotional support can all help determine the amount of human capital a child takes to the labor market. Economists have not tried to measure the other two elements, but they have done a little work on parental time inputs. Leibowitz (1974) has used the data in the Terman sample of California children in school around 1920. However, these individuals were in the top 2 percent of the IQ distribution, and it is not clear how her results generalize to the whole IQ distribution, the rest of the country, or more recent generations. Nevertheless, parental "hometime" spent with the child was about the same for daughters and sons (p. S131).

More recent time budget studies such as those summarized in Hill (1985) make a distinction between fathers and mothers, but not usually between daughters and sons. However, Hill and Stafford (1980), using a detailed time budget study, note that (p. 221) "college-educated mothers devoted more time to the care of their preschool daughters than to their preschool sons, while the converse was true for those mothers with less than a college education."¹⁴

Studies that relate men's and women's earnings to parental characteristics, such as education, exist, though their interpretation is complicated by the large number of women not working at a point of time. This is less of a problem when studying years of schooling. A recent summary of this education literature is given in Behrman and

Taubman (1985), where some evidence is presented that the father's education has relatively larger impacts on the son's success and the mother's on the daughter's success.

As noted earlier, Bound, Griliches, and Hall (1986) find that latent family effects for the variance of IQ, years of schooling, and the natural logarithm of earnings are essentially the same for both sexes. When panel data are available for siblings, it is possible to estimate an individual fixed effect. Furthermore, using sibling panel data, the fixed effect can be decomposed into a family effect common to each sibling and an individual specific effect. Solon et al. (1987) find that the family component shared by siblings and the individual effect not shared by siblings are about the same share of the variance in the log of income for both sexes.

Childhood activities may also affect both the amount of schooling progenies obtain and their future labor market success. For example, for men Taubman (1975) shows that having spent much time on chores as a child is associated with about a 10 percent reduction in earnings near age 50, but that a large amount of time spent on part-time work is associated with a corresponding increase in earnings at the same age.

Generally it is not clear if the parents influence the children's willingness to take part-time jobs or to drop out of work. When child labor was common, as in the nineteenth century, there is less of an interpretative issue. Parsons and Goldin (1989) show that beginning in the age category of 5 to 10, males are more likely to be at work and not in school than females, though the differential varies by children's wage opportunities and fathers' wages.¹⁵

As shown in table 3, there are differences in labor force participation rates¹⁶ between males and females aged 16 to 17. Males are more likely to work whether black or white; however, the gender differential has narrowed substantially over time. Over time, males have participated less in the labor force while female participation has increased. It is not obvious to me if these trends represent parental changes in support for their children, parental discrimination, growth in fast food and other teenage work opportunities, or extra protectiveness for daughters in the past.

Table 3
Labor Force Participation Rates of 16- and 17-Year-Old
Men and Women
(percent)

	Males			Females		
	All	White	Black	All	White	Black
1948	52.1	NA	NA	31.4	NA	NA
1954	47.1	47.1	NA	28.7	29.3	NA
1964	42.8	43.5	NA	27.4	28.4	NA
1974	50.5	53.3	34.0	40.4	43.3	22.7
1983	43.2	46.9	24.7	39.9	43.9	20.8

SOURCE U S Department of Labor (1985)

It is possible to extend the story back to slightly earlier ages. Timmer, Eccles, and O'Brien (1985) use diaries collected from children to determine how they spend their time. During the week, boys and girls aged 12 to 17 average about 20 minutes a week at market work. However, girls spend 40 minutes and boys 16 minutes per week at housework, which may have consequences in the future. During weekends males and females average about 60 minutes and 25 minutes at market work, respectively, while household work averages 45 minutes and 1.5 hours for males and females.

A few studies have examined the distribution of financial assets. Menchick (1980) finds that estates are split evenly among daughters and sons. In another study, he found that more than 80 percent of estates with multiple surviving children are split evenly; hence, little room exists for gender differences.

Behrman, Pollak, and Taubman (1989) examine the distribution of "help from relatives." They use the Michigan Panel Survey of Income Dynamics (PSID). The PSID surveyed a random sample of people in 1968. The same people and split-offs from their household have been followed through the current time period. Behrman, Pollak, and Taubman studied the average-help-received variable for the period 1982 through 1984 for children who were less than 18 in 1968 and not students in 1984. They found that females receive about one-third less help than

men, but this amounts to less than \$90 per year. Incidentally, they found only minor effects of own earnings or parental income on help received from relatives.

There is little evidence of differential treatment by gender of children. Would such differences, if found, be evidence of discrimination, and is the absence of differences evidence of nondiscrimination? The answer to both questions is “not necessarily,” for reasons shown in the appendix to this essay.

Conclusion

In this paper I have examined the little evidence available on the treatment of daughters and sons by parents. Raw statistics on bequests, transfers, earnings and educational attainment suggest little difference by gender. College expenditure data for Pennsylvanians indicate that girls on average go to slightly more expensive schools.

I have also constructed a formal model in which I translate discrimination into parents caring more for or giving more weight to one child's earnings in the parents' utility function. By making some strong assumptions, it is possible to generate an equation where we can determine if parents discriminate against one sex in the provision of education. Based on one U.S. sample, parents care equally for sons and daughters. Hence, if there are labor market differences in earnings, they are not arising because of parents favoring boys.

NOTES

1 See *The Torah: The Five Books of Moses* (1962)

2 Recently the increased labor force participation of women with high-earnings spouses had led to increased inequality in family income (adjusted for family size) See Danziger, Gottschalk, and Smolensky (1989) This suggests a recent increase in skills of the female labor force

3. See Bishop (1989), who uses data on SAT scores—which peaked in the mid-1960s—and other measures of knowledge

4 For some evidence on this, see Goldin (1990); however, see Smith and Ward (1989) for contrary evidence

5. See Hill and Stafford (1980)
6. See Arrow (1973) for more formal proof.
7. Behrman et al (1980)
8. See Behrman et al (1980) and Behrman and Taubman (1989)
9. Corcoran and Datcher (1981) indicate that much of sibling similarity in schooling and earnings can be proxied by a list of parental characteristics such as education, they do not worry how much of these effects are genetic or environmental, and sibling similarity omits about half of the genetic effect and specific environment provided by parents to a child
- 10 There may be a bias in his data for our purposes because some members of a birth cohort died prior to the 1940 Census—the first one used Age-specific mortality is related to education, with the more educated living longer, and to sex, with women generally living longer, but birth-related deaths may have affected older female cohorts more strongly
- 11 See Taubman (1975) for some evidence on the effect of going to such schools on male earnings around age 50
- 12 While the data are not perfect because there are income eligibility limits, there is no reason to think the percentage above the limits varies by gender
13. The “state-owned” category includes schools such as Bloomsburg It does not include Penn State
- 14 In conversation, Stafford has indicated that these results are more reliable than earlier ones he summarized in this article based on another sample
15. They also suggest parents chose cities to maximize family income, including that for child labor, which greatly complicates the analysis since parents’ earnings may go down even as family income rises.
16. You participate if you have or are actively looking for a job

Appendix

Altruism and Investment in Human Capital

This appendix summarizes the work of Behrman, Pollak, and Taubman (1986). Altruistic parents are those whose utility function depends on their children's consumption or income, as well as the parents' own consumption. In general, an equilibrium allocation of resources between altruistic parents and each child requires that (to the parents) the ratio of the marginal utility of parental consumption and the marginal utility of a child's consumption equal the ratio of the price of each type of consumption. This also means the ratio of the marginal utility of one child's consumption to another child's equal the ratio of their prices of consumption goods.

A child's earnings depend on both his or her genetic endowments and home and other environments. Parents can influence their children's future consumption possibilities by investing time, money, and affection in them. For simplicity, call these investments the home environment, E_H . It is also possible that other environmental influences exist, for example, accidents, particular teachers, own friends, and the institution of governmental policies not expected when parents chose a neighborhood.

Suppose the parent's utility function can be divided into two separable parts: parental consumption and children's earnings. We will concentrate on the latter part. Let us examine the resources (R) devoted just to the child's environment. Let there be just two children, one of each gender. The parameters of the utility help determine the distribution of resources invested in each child, but do not necessarily indicate discrimination.

Parents *discriminate* for or against each child only if the weights they give to each child's earnings are not equal. With this definition, unequal education or unequal income is not necessarily parental discrimination nor is equal education and income a guarantee of parental nondiscrimination.

Behrman, Pollak, and Taubman (1986) studied the interaction of the parents' utility function and the child's human capital function to see how parental discrimination may affect the level of schooling and earnings by gender. For the functional forms they use, they find that whether or not parents discriminate depends solely on the shape of the parents' utility function. Their empirical work suggests no favoritism towards males.

REFERENCES

- Akerlof, G. (1985). "Discriminatory Status-Based Wages Among Tradition-Oriented Stochastically Trading Coconut Producers," *Journal of Political Economy* 93, 2 (April), 265-276.
- Arrow, K. (1973). "The Theory of Discrimination." In *Discrimination in Labor Markets*, eds. O. Ashenfelter and A. Rees. Princeton University Press.
- Behrman, J.R., R. A. Pollak, and P. Taubman. (1982). "Parental Preferences and Provision for Progeny," *Journal of Political Economy* 90, 1 (January/February), 52-73.
- _____. (1986). "Do Parents Favor Boys?" *International Economic Review* 27, 1 (February), 31-52.
- _____. (1989). *The Wealth Model: Efficiency in Education and Equity in the Family*. University of Pennsylvania Mimeo.
- Behrman, J.R. and P. Taubman. (1986). "The Effects of Number and Position of Siblings on Child and Adult Outcomes," *Social Biology* 33, 1-2 (Spring-Summer), 33-34.
- _____. (1985). "Intergenerational Earnings Mobility in the U.S.: Some Estimates and a Test of Becker's Intergenerational Endowments Model," *Review of Economics and Statistics* 67, 1 (February), 144-151.
- _____. (1989). "Is Schooling 'Mostly in the Genes'? Nature-Nurture Decomposition Using Data on Relatives." *Journal of Political Economy* 97, 6 (December), 1425-1446.
- Behrman, J.R., P. Taubman, T.J. Wales, Z. Hrubec. (1980). *Socioeconomic Success with Special Reference to Genetic, Family and Other Environments*. Amsterdam: North-Holland.
- Bishop, J. (1989). "Is the Test Score Decline Responsible for the Productivity Growth Decline?" *American Economic Review* 79, 1 (March), 178-197.
- Bound, J., Z. Griliches, and B. Hall. (1986). "Wages, Schooling and IQ of Brothers and Sisters: Do the Family Factors Differ?" *International Economic Review* 27, 1 (February), 77-105.
- Corcoran, M. and L. Datcher. (1981). "Intergenerational Status Transmission and the Process of Individual Attainment." In *Five Thousand American Families. Patterns of Economic Progress*, ed. M. Hill et al.
- Corcoran, M. and G. Duncan. (1979). "Work History, Labor Force Attachment, and Earnings Differences Between Races and Sexes," *Journal of Human Resources* 14, 1 (Winter), 3-20.
- Danziger, S., P. Gottschalk, and E. Smolensky. (1989). "How the Rich Have Fared, 1973-87," *American Economic Review* 79, 2 (May), 310-319.
- Goldin, C. (1990). *Understanding the Gender Gap: An Economic History of American Women*. New York: Oxford University Press.
- Hill, C.R. and F.P. Stafford. (1980). "Parental Care of Children: Time Diary Estimates of Predictability and Variety," *Journal of Human Resources* 15, 2 (Spring), 219-239.

- Hill, M. (1985). "Patterns of Time Use." In *Time, Goods, and Well-Being*, eds. F.T. Juster and F.P. Stafford. Ann Arbor: ISR, University of Michigan.
- Leibowitz, A. (1974). "Home Investments in Children," *Journal of Political Economy* (March/April), Part 2.
- Loehlin, J.C. and R.C. Nichols. (1976). *Heredity, Environment, and Personality. A Study of 850 Sets of Twins*. Austin: University of Texas Press
- Lucas, R.E.B. (1977). "Hedonic Wage Equations and Psychic Wages in the Returns to Schooling," *American Economic Review* 67, 4 (September), 549-558.
- Margo, R. (1986). "Educational Achievement in Segregated School Systems: The Effects of Separate-But-Equal," *American Economic Review* 76, 4 (September), 794-801.
- Menchik, P. (1980). "Primogenitures, Equal Sharing and the U.S. Distribution of Wealth," *Quarterly Journal of Economics* (March).
- Mincer, J. and H. Ofek (1982). "Interrupted Work Careers, Depreciation and Restoration of Human Capital," *Journal of Human Resources* 17, 1 (Winter), 3-24.
- Neumark, D. (1988). "Employer's Discriminatory Behavior and the Estimation of Wage Discrimination," *Journal of Human Resources* 23, 3 (Summer), 279-295
- Parsons, D.O. and C. Goldin. (1989). "Parental Altruism and Self-Interest. Child Labor Among Late Nineteenth-Century American Families," *Economic Inquiry* 27 (October), 637-659.
- Scarr, S. and R.A. Weinberg. (1976) "IQ Test Performance of Black Children Adopted by White Families," *American Psychologist*, 726-739
- Smith, J. (1984). "Race and Human Capital," *American Economic Review* 74, 4 (September), 685-695.
- Smith, J. and M. Ward. (1989). "Women in the Labor Market and in the Family," *Journal of Economic Perspectives* (Winter), 9-24.
- Solon, G., et al. (1987). "The Effect of Family Background and Economic Status: A Longitudinal Analysis of Sibling Correlations." University of Michigan. Mimeo.
- Taubman, P. (1975). *Sources of Inequality of Earnings*. Amsterdam North-Holland.
- Tellegen, A. et al. (1988). "Personality Similarity in Twins Reared Apart and Together," *Journal of Personality and Social Psychiatry* 54, 6, 1031-1039.
- The Torah: The Five Books of Moses*. (1962). [A new translation of the Holy Scriptures according to the Masoretic text] Philadelphia: The Jewish Publication Society of America.
- Timmer, S., J. Eccles, and K. O'Brien. (1985). "How Children Use Time " In *Time, Goods and Well-Being*, eds. F.T. Juster and F.P. Stafford. Ann Arbor: ISR, University of Michigan.
- U.S. Department of Labor. (1985). *Handbook of Labor Statistics*. Washington, D.C.: U.S. Government Printing Office.